CLAIMS

1. A method of automatically configuring a HART multidrop system, comprising a master device (1) and a plurality of slave devices (2_1, ... , 2_{15}) coupled to the at least one master device (1), wherein the method includes the steps of:

5   a) connecting the slave devices (2_1, ... , 2_{15}),

     b) switching on the power source (3) for the slave devices (2_1, ... , 2_{15}) in the master device (1);

     c) transmitting the HART command "Write polling address" as a broadcast command from the master device (1) with a polling address not equal to zero, with the result that

10   all slave devices (2_1, ... , 2_{15}) connected to the master device (1) are automatically switched to the multidrop mode and all slave devices (2_1, ... , 2_{15}) obtain an identical address not equal to zero,

     d) changing the addresses for all slave devices (2_1, ... , 2_{15}) from the identical address to a unique address for each slave device (2_1, ... , 2_{15}).

15 2. A method of automatically configuring an existing HART multidrop system, comprising a master device (1) and a plurality of slave devices (2_1, ... , 2_{15}) connected to the at least one master device (1), and which is to be complemented by at least one more slave device, wherein the method includes the steps of:

     a) connecting the at least one more slave device (2_1, ... , 2_{15}),

20   b) switching off the power source (3) for the slave devices (2_1, ... , 2_{15}) in the master device (1) if it is still switched on;

     c) switching on the power source (3) for all slave devices (2_1, ... , 2_{15}) in the master device (1);

     d) transmitting the HART command "Write polling address" as a broadcast command from the master device (1) with a polling address not equal to zero, causing all slave

25   devices (2_1, ... , 2_{15}) connected to the master device (1) to be automatically switched to the multidrop mode and all slave devices (2_1, ... , 2_{15}) to obtain an identical address not equal to zero,

     e) changing the addresses for all slave devices (2_1, ... , 2_{15}) from the identical address to

30   a unique address for each slave device (2_1, ... , 2_{15}).

3. The method according to claim 2, wherein it is checked before step b) whether the supply voltage or the supply current for the slave devices (2_1, ... , 2_{15}) is about zero.

4. The method according to claim 2, wherein step c) is carried out after a predetermined time interval after step b), which ensures that no voltage or no current is applied to the slave devices (2_1, ... , 2_{15}) before the power source for the slave devices (2_1, ... , 2_{15}) is switched on.

5. The method according to any one of the preceding claims, wherein, in the HART command "Write polling address" transmitted as a broadcast command, the polling address has a value between 1 and 15.

6. The method according to any one of the preceding claims, wherein in step d) or step e) a unique address between 1 and 15 is input for each slave device (2_1, ... , 2_{15}) by an operator in an inquiry routine.

7. The method according to claim 6, wherein before the input of a unique address for a slave device (2_1, ... , 2_{15}) it is queried whether this slave device (2_1, ... , 2_{15}) has already been configured and, if the answer is yes, the same address is again assigned to said slave device (2_1, ... , 2_{15}).

8. The method according to claim 7, wherein the HART command No. 6 is transmitted with the identifier for said slave device (2_1, ... , 2_{15}) and the previously assigned address.

9. The method according to claim 6, wherein, together with the input of a unique address for a slave device (2_1, ... , 2_{15}), an identifier characterizing said slave device (2_1, ... , 2_{15}) is input.

10. The method according to claim 9, wherein the serial number of said slave device (2_1, ... , 2_{15}) is input as said characterizing identifier.

11.   A HART multidrop system, comprising:

- at least one master device (1) having a power source (3) for slave devices $(2_1, \ldots, 2_{15})$,

- a plurality of slave devices $(2_1, \ldots, 2_{15})$ coupled to the at least one master device (1), and

- a control unit (4) which switches on the power source (3) for the slave devices $(2_1, \ldots, 2_{15})$ in the master device (1) to automatically configure the HART multidrop system and transmits the HART command "Write polling address" as a broadcast command with a polling address not equal to zero causing all slave devices $(2_1, \ldots, 2_{15})$ connected to the master device (1) to be automatically switched to the multidrop mode, wherein all slave devices $(2_1, \ldots, 2_{15})$ receive the identical address not equal to zero, and which also allows the identical addresses for the slave devices $(2_1, \ldots, 2_{15})$ to be changed to individual addresses for each slave device $(2_1, \ldots, 2_{15})$.

12.   The HART multidrop system according to claim 11, wherein the control unit (4) checks before the power supply (3) is switched on whether the supply voltage or the supply current for the slave devices $(2_1, \ldots, 2_{15})$ is about zero.

13.   The HART multidrop system according to claim 11, wherein the control unit (4) is programmed to switch on the power supply (3) at a predetermined time interval after the switching off process, which ensures that no voltage or no current is applied to the slave devices $(2_1, \ldots, 2_{15})$ before the power supply for the slave devices $(2_1, \ldots, 2_{15})$ is switched on.

14.   The HART multidrop system according to any one of claims 11 to 13, wherein the control unit (4) can run an inquiry routine in which an operator can input a unique address of between 1 and 15 for each slave device $(2_1, \ldots, 2_{15})$.

15.   The HART multidrop system according to claim 14, wherein the control unit (4) can run a checking routine which queries before a unique address is input for a slave device $(2_1, \ldots, 2_{15})$ whether said slave device $(2_1, \ldots, 2_{15})$ has already been

configured and, if the answer is yes, assigns the same address to said slave device (2_1, ..., 2_{15}).

16. The HART multidrop system according to claim 15, wherein the checking routine involves HART command No. 6 being transmitted with the identifier for said slave device (2_1, ..., 2_{15}) and the previously assigned address.

17. The HART multidrop system according to claim 14, wherein an identifier characterizing said slave device (2_1, ..., 2_{15}) is input together with the input of a unique address for said slave device (2_1, ..., 2_{15}).

18. The HART multidrop system according to claim 17, wherein the serial number of said slave device (2_1, ..., 2_{15}) is input as said characterizing identifier.

19. The HART multidrop system according to claim 11, wherein, before switching on the power source, the power source (3) of the master device (1) is switched off.